Initiatives for Kirin Group's Environmental Vision 2050

(Biological and Water Resources)

December 9, 2021

Kirin Holdings Company, Limited

International trends and Kirin's actions

- Kirin Group has been on the forefront of international trends and an industry leader in responding to the environment, including providing assistance to tea farms for obtaining RA certification* since 2013 and calculating natural capital in 2014.

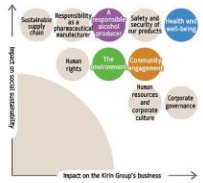
Kyoto Protocol (1997) | **COP10 Nagoya Protocol on Biological Diversity** (2010) | **Paris Agreement; SDGs** (2015) | **TCFD** (2017) | **IPCC Special Report on Global Warming of 1.5°C** (2019) | (2020)

- Kirin Brewery's Kobe Plant, an advanced model brewery for low-carbon and water-saving production, completed (1997)

- 100% recycling achieved at all breweries (1998)
- Start of "Water Source Forestation Activities" (1999)

- Action Plans for Becoming a Low-Carbon Corporate Group announced (2009)
- Declaration of Support for Biodiversity Conservation announced (2010)
- Kirin Group's Long-Term Environmental Vision announced (2013)
- Survey of water risks to natural capital and major global business sites (2014)
- Guidelines for the Procurement of Sustainable Biological Resources and an Action Plan announced (2013)
- Start of support for tea farms in Sri Lanka to acquire Rainforest Alliance certification (2013)
- Start of development and deployment of lightweight medium bottles (2014)
- Use of 100% recycled PET bottles started (2014)
- Reduced weight for all large bottles (2003)

- Group Materiality Matrix announced (2016)



- CSV Commitment announced as SDGs Initiative (2017)
- Becomes the first food and beverage manufacturer in Japan to be approved by SBT (2017)
- First Japanese company to support the TCFD recommendations (2018)
- Announcement of CSV long-term and non-financial targets "Kirin Group CSV Purpose" (2019)

- Start of water source conservation activities in Sri Lankan tea farms (2018)

- Kirin Group Plastic Policy announced (2019)
- Kirin Group's Environmental Vision 2050 announced (2020)
- "Kirin Holdings Green Bonds" issued (2020)
- Achieved use of FSC-certified paper in 100% of paper containers at Kirin Brewery, Kirin Beverage, and Mercian (2020)

FSC® C137754

- Joined RE100 (2020)
- Upgraded SBT to 1.5°C (2020)
- Expanded R100 PET bottles to cover the *Nama-cha* series (2021)
- 100% renewable energy purchased at Kirin Brewery's Nagoya Plant (2021)

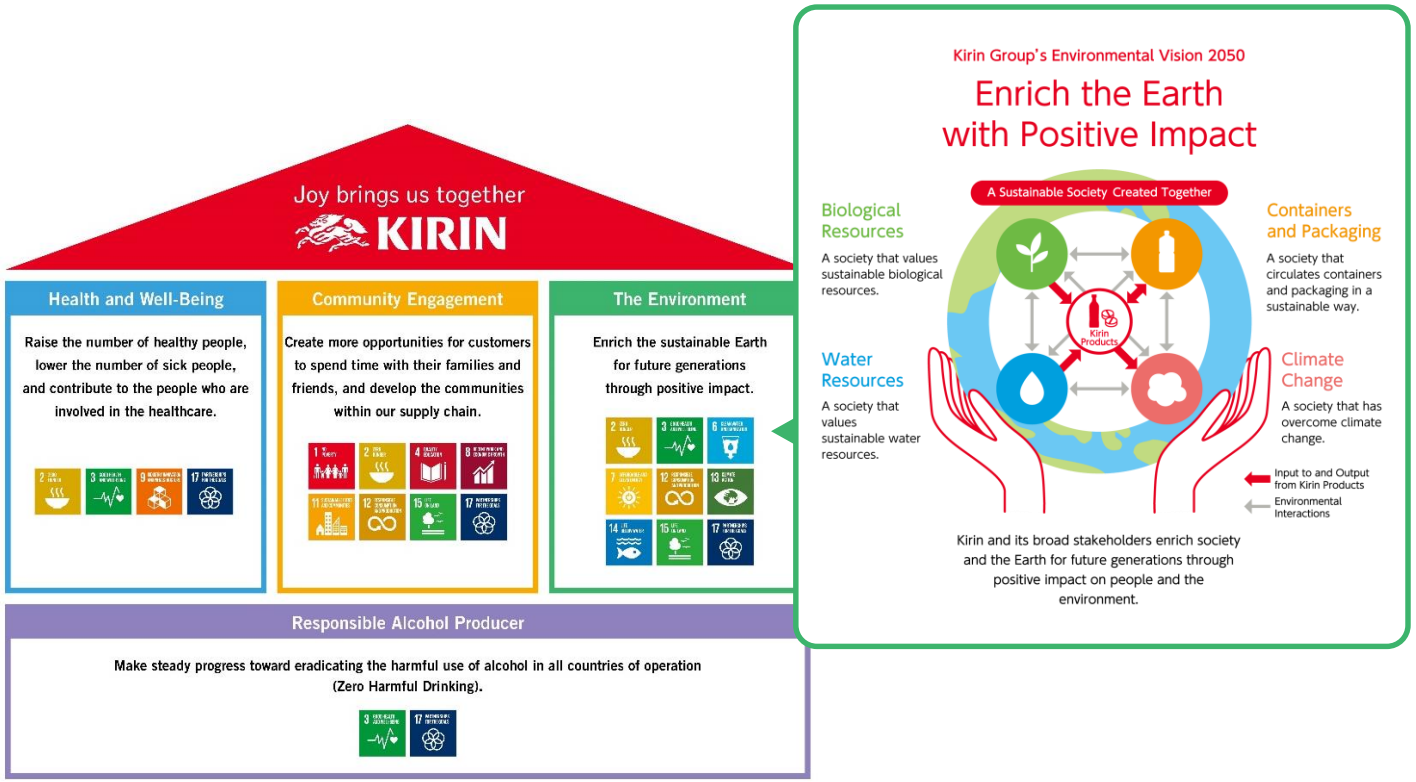
* The Certification given to farms that are recognized for their commitment to more sustainable farming

Find out more at ra.org : https://www.rainforest-alliance.org/

CSV Purpose and “Reverence for Life”

- Kirin Group is aiming to become a ‘global leader in CSV’ by pursuing the 4 purposes of: a responsible alcohol producer, health and well-being, community engagement and the environment.

CSV Purpose



Reverence for life

Kirin Group's Environmental Vision 2050

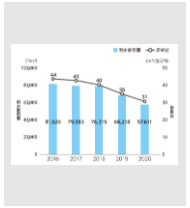
Introducing initiatives for biological and water resources

Biological resources

▲Support for obtaining Rainforest Alliance certification

Water resources

Forested watershed



Reduce water use

Watershed conservation in primary producing areas

Introduce this year

Kirin Group's Environmental Vision 2050

Enrich the Earth with Positive Impact

Kirin and its broad stakeholders enrich society and the Earth for future generations through positive impact on people and the environment.

Introduced last year

Containers & packaging

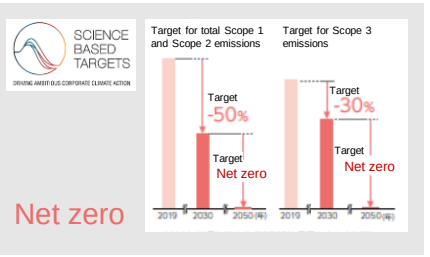
100% FSC® certified paper

100% recycled PET resin

Climate change

RE100 CLIMATE GROUP | CDP

Net zero



Shift to 100% renewable energy

Biological Resources

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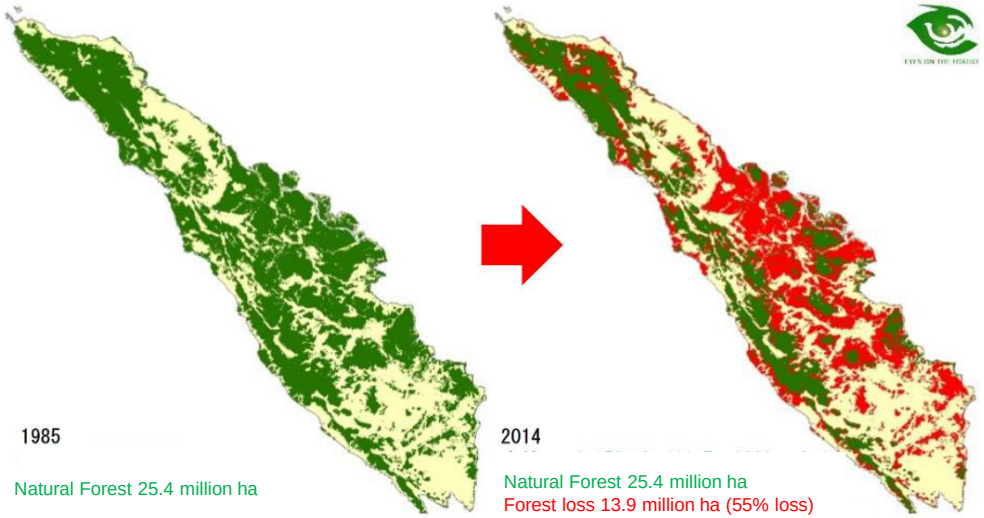
Risks to Biological Resources

- On the island of Sumatra in Indonesia, 55% of the forests have disappeared (lowland forests have disappeared)*.
- Companies using palm oil linked to illegal logging in Indonesia have been targeted for criticism.

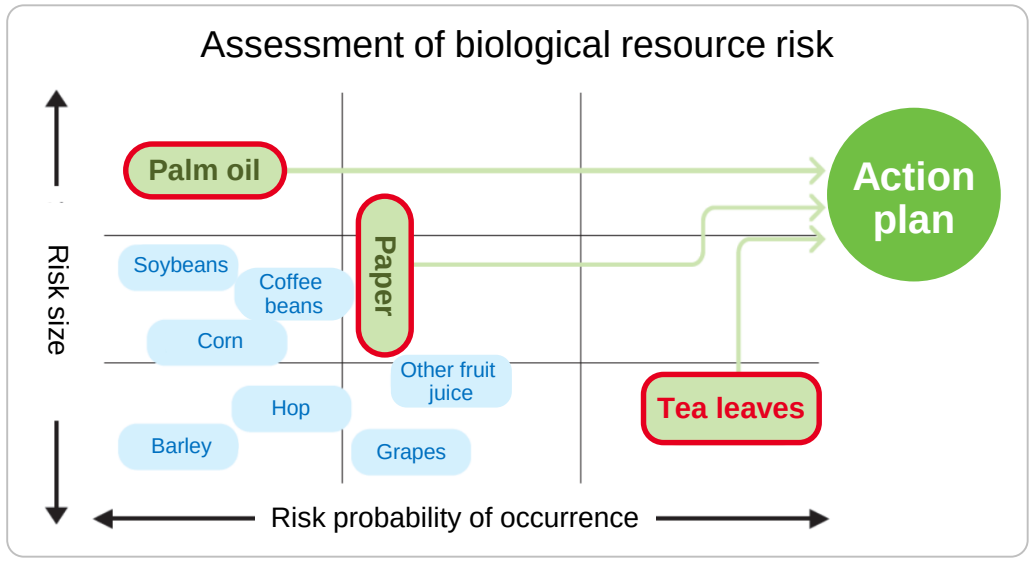


* Decrease from 1985 to 2016. WWF Japan：https://www.wwf.or.jp/activities/basicinfo/42.html
https://www.wwf.or.jp/activities/activity/4327.html/ https://www.wwf.or.jp/activities/activity/1369.html

COP10 & COP15 and Setting Targets for the Use of Biological Resources

- Following the COP10 meeting in Nagoya in 2010, Kirin initiated an action plan for palm oil, paper and tea leaves in 2013.
- In 2021, the action plan was expanded to include coffee beans and soybeans in line with the COP15 meeting in Kunming.

Kirin Group Action Plan for the Sustainable Use of Biological Resources (2013)



Refrain from procuring materials produced on farms created by illegal logging of tropical rainforests

Revision made this year and initiatives (2021)

	Revised version
Tea leaves	Provide support for obtaining RA certification to tea farms in Sri Lanka, and **sell products showing the certification logo year-round**
Paper	**Expand the scope of use of sustainable paper, such as FSC certified, globally**
Palm oil	Purchase credits for palm oil used as a primary or secondary raw material, and continue to achieve 100% compliance. **Procure actual certified palm oil used as a primary raw material by 2030** and work with suppliers regarding palm oil used as a secondary raw material
Coffee	**Newly added. Provide support for obtaining RA certification to coffee farms in Vietnam**
Soybeans	**Newly added. Use soybeans from highly sustainable farms**

Support to Sri Lankan Tea Farms for Obtaining Rainforest Alliance Certification

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Risk Assessment of Biological Resource Risks

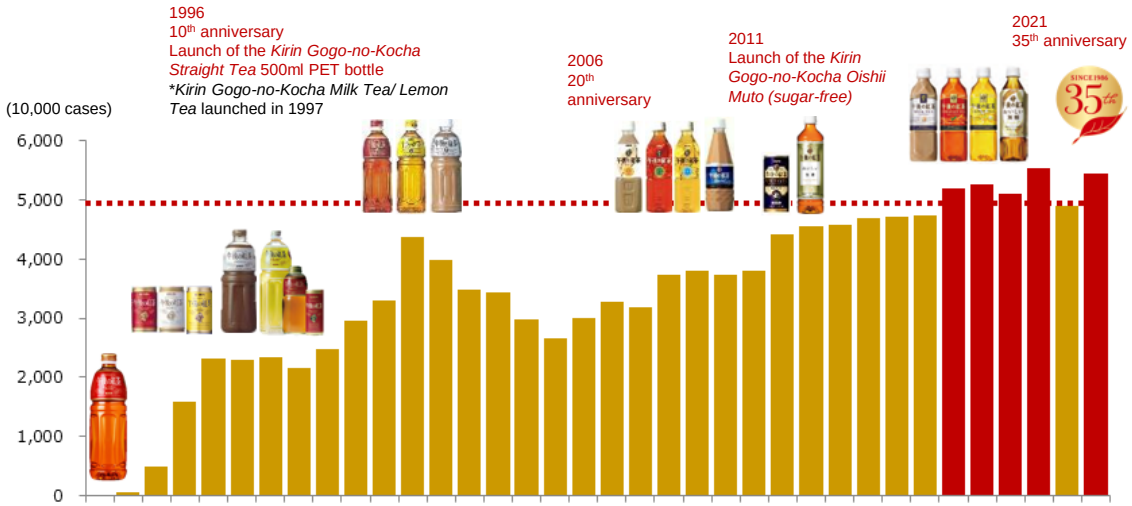
Reliance on Sri Lanka for *Kirin Gogo-no-Kocha* tea leaves

› There is high reliance on Sri Lanka for tea leaves. About 50% of Japanese tea leaf imports are from Sri Lanka. Of that, about 24% are used in *Kirin Gogo-no-Kocha* products.

1986 ⇒ 2020

About 250 times

Sales of *Kirin Gogo-no-Kocha* brand products



Source: Investigation by Food & Beverage Marketing and Kirin Beverage (dry & chilled)

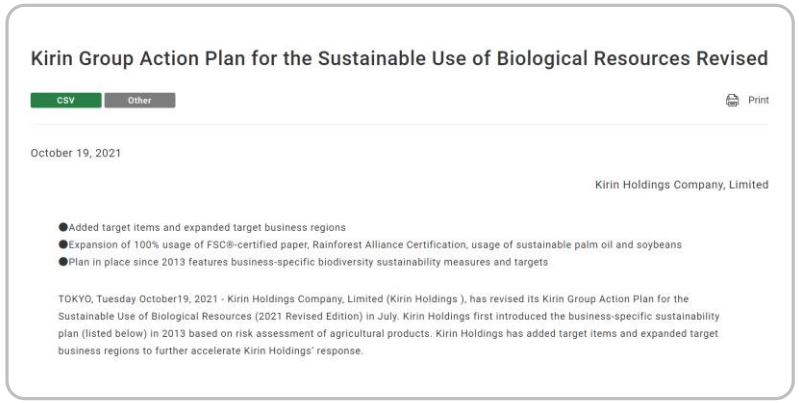
Ratio of Japanese tea leaf imports

Used in Kirin *Gogo-no-Kocha* products

About **one-fourth** of all tea leaves imported from Sri Lanka are used in *Kirin Gogo-no-Kocha* products*.

* Source: Japan Tea Association's 2011 tea leaf statistics

Action plan for the use of biological resources



Kirin Group Action Plan for the Sustainable Use of Biological Resources Revised

CSV Other Print

October 19, 2021

Kirin Holdings Company, Limited

- Added target items and expanded target business regions
- Expansion of 100% usage of FSC®-certified paper, Rainforest Alliance Certification, usage of sustainable palm oil and soybeans
- Plan in place since 2013 features business-specific biodiversity sustainability measures and targets

TOKYO, Tuesday October19, 2021 - Kirin Holdings Company, Limited (Kirin Holdings), has revised its Kirin Group Action Plan for the Sustainable Use of Biological Resources (2021 Revised Edition) in July. Kirin Holdings first introduced the business-specific sustainability plan (listed below) in 2013 based on risk assessment of agricultural products. Kirin Holdings has added target items and expanded target business regions to further accelerate Kirin Holdings' response.

Background on Support for Obtaining Rainforest Alliance Certification

› Support for obtaining certification started with the goal of establishing a good partnership with the producing regions and people working there in order to ensure the continued production of delicious, safe tea beverages.

Kirin's options

1 **Identify and procure only sustainable tea leaves**

farms with sufficient capital to obtain certification

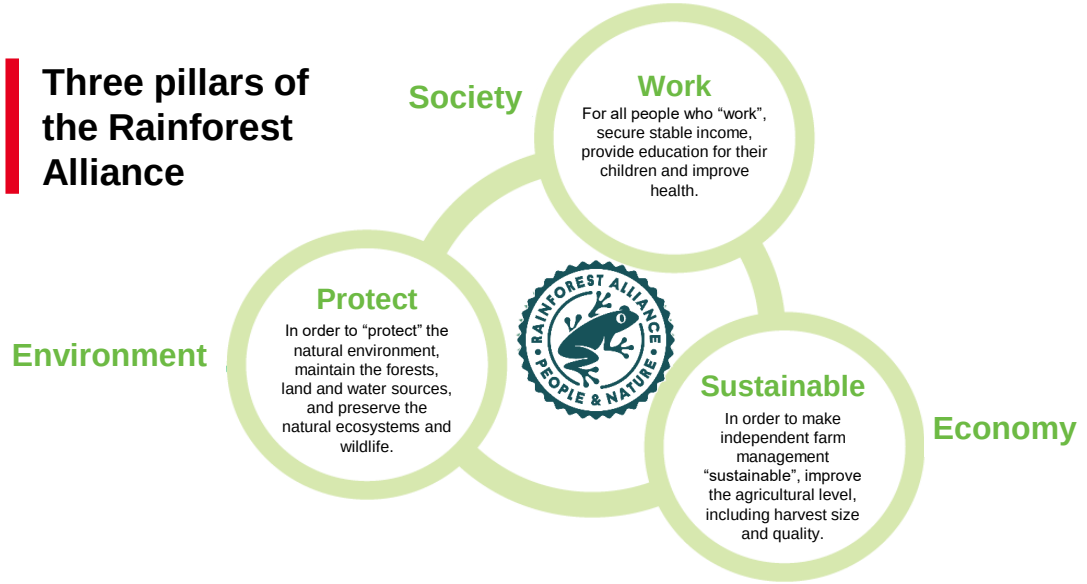
Despite a desire to practice sustainable agriculture, farms with little capital would be pushed to the side.

2 **Provide support for obtaining certification to tea farm**

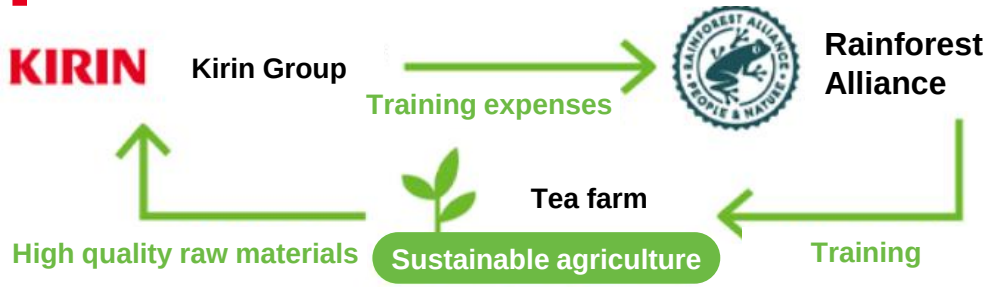
Will require a long time until certified tea leaves can be obtained

Instead of procuring only certified tea leaves, make the entire production region sustainable by providing support for obtaining certification to farms.

Three pillars of the Rainforest Alliance



Structure of support provided for obtaining Rainforest Alliance certification



Environmental Benefits From Obtaining Rainforest Alliance Certification

- In addition to protecting wildlife and managing waste, planting cover crops on slopes help prevent landslides and provide a climate change solution.

Wildlife Protection

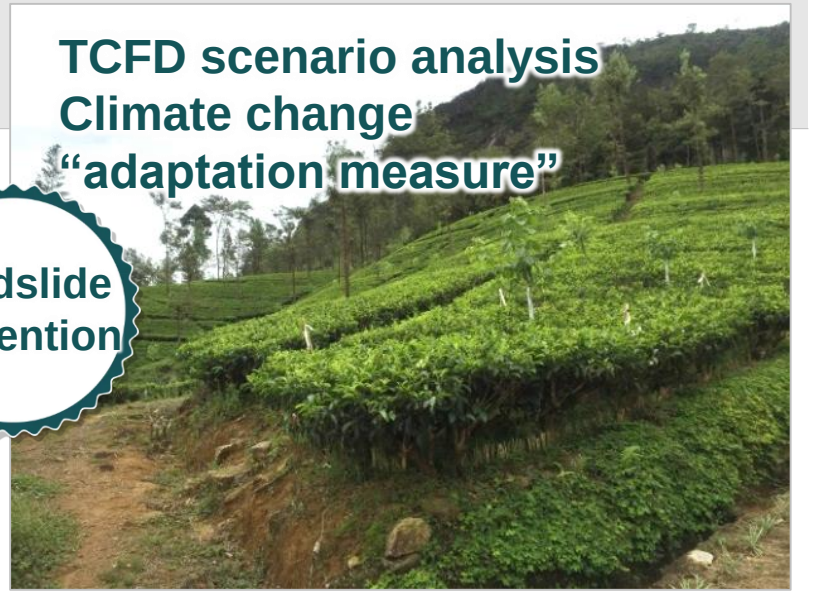
Waste Control

Forests Preservation

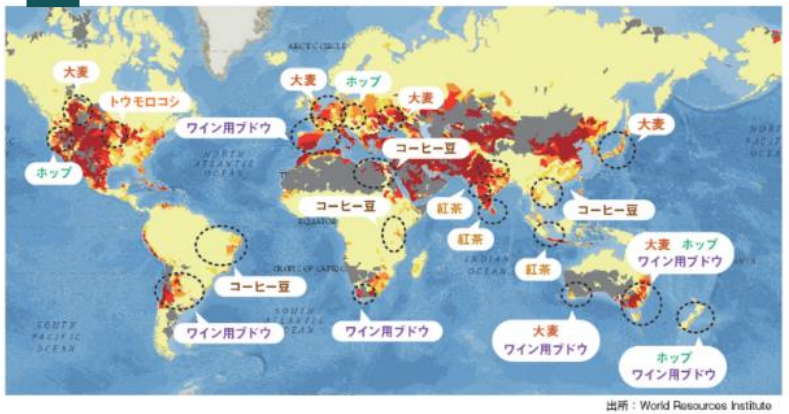
Wastewater Treatment

Landslide Prevention

TCFD scenario analysis
Climate change
“adaptation measure”



Scenario analysis / water-related risks to agricultural products and growing regions

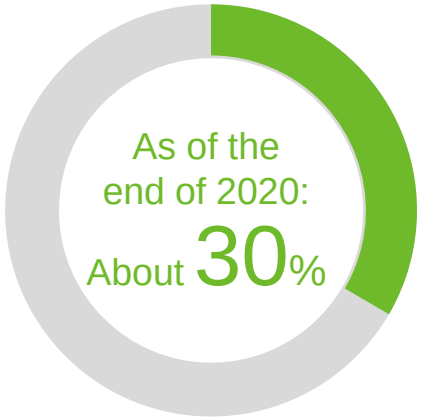


Launch a Year-round Product that Uses Tea Leaves from Rainforest Alliance-Certified Farms

- Sri Lankan tea farms are steadily obtaining certification.
- Going forward, work to increase consumer awareness of our activities and strengthen the brand.

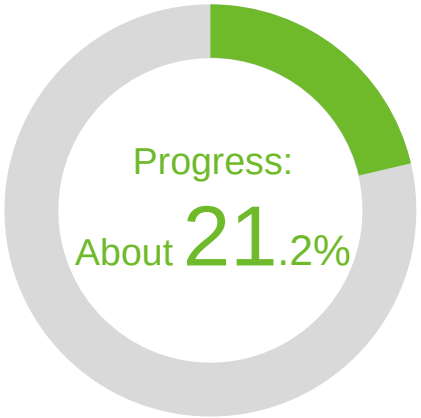
Ratio of all large certified farms in Sri Lanka that received certification through support from Kirin

Certified farms:
93



Certification support to small farms

farms in training:
2,120
(Certified farms: 120)
FY25 Target: 10,000



Begin selling year-round products that use at least 90% tea leaves from certified farms in Sri Lanka

Face

- **Place the Rainforest Alliance mark on the package face**
- **On the side, state "*Kirin Gogo-no-Kocha* supports Sri Lankan tea farms"**
- **Use FSC-certified paper**

Side

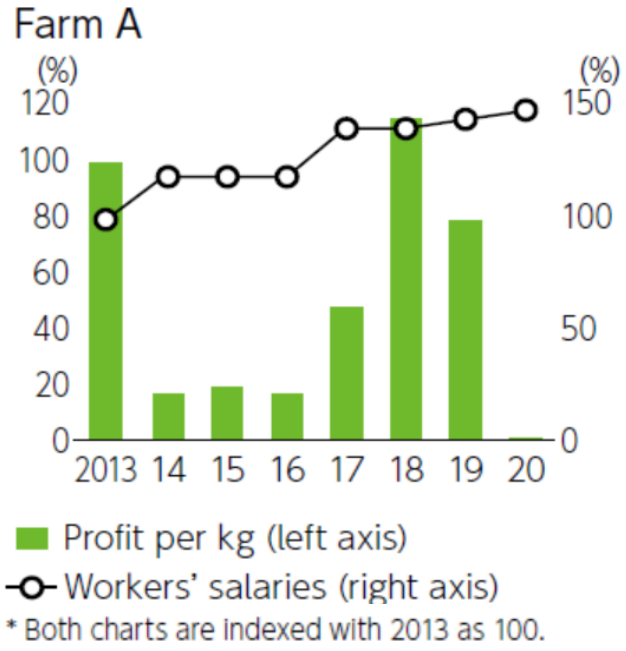
* Animated commercial above has been viewed about 5.6 million times on YouTube

Expanding Social Impact and Certification Support Activities

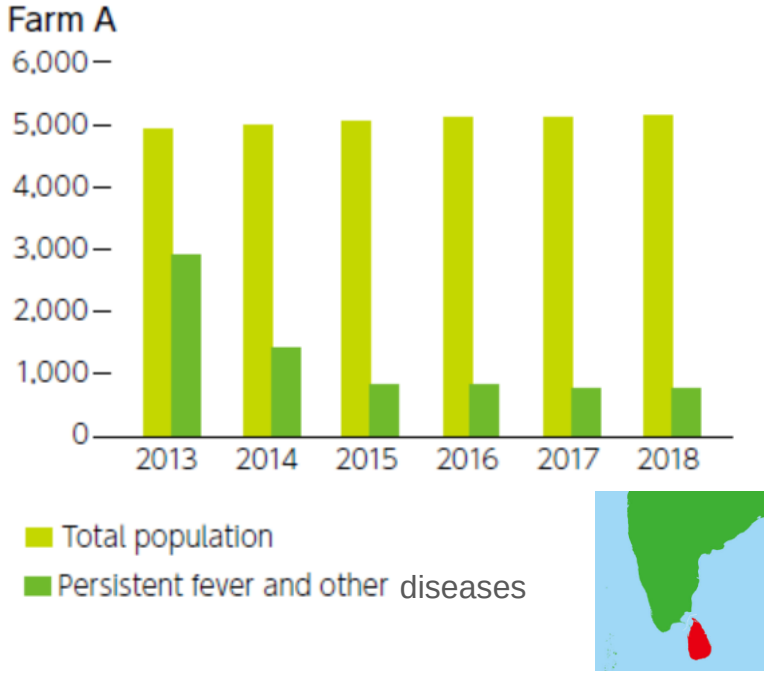
- After obtaining certification, tea farm profits increased, tea picker wages rose, and the prevalence of illness decreased.
- Based on the knowledge obtained, expand certification support to include coffee farms in Vietnam.

Outcomes

Tea farm profit & Tea picker wages



Prevalence of illness in the local community around the tea farm



Vietnam coffee farms

Ecological Surveys in Japanese Vineyards

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Ecological Survey at Mariko Vineyard: Background

- Beginning in 2014, a survey of the impact on the ecosystem of converting idle land into Mariko Vineyard began as a joint research project with NARO*.

Growth of Japanese wine

- 37,000 cases (2016)⇒67,000 cases (2027)
- Conversion of idle and abandoned land into vineyards

Social issues

- Productive use of idle and derelict land
- Regional revitalization

Does converting idle and abandoned land into vineyards for Japanese wine have a negative impact on the ecosystem?

- As a result of the survey conducted with NARO, it was found that **Mariko Vineyard has a diverse ecosystem that includes rare species.**
- Vertical shoot positioning cultivation with **grass underneath**, when properly managed creates **vast good-quality grassland**.

*National Agriculture and Food Research Organization

A Diverse Ecosystem, Home to Rare Species Was Found During the Survey

- Discovered many rare species (plants & insects) at Mariko Vineyard (Nagano Prefecture).
- Vineyards with vertical shoot positioning cultivation and grass undergrowth have a positive impact on biodiversity.

Zygaena niphona: Near threatened species on the Ministry of the Environment and Nagano Red List

Sophora flavescens: The only edible feeding grass for Shijimiaeoides divinus, a butterfly listed as critically endangered on the Ministry of the Environment Red List IA (designated as endangered in the Nagano Red List IB)

Argyronome laodice japonica: Vulnerable species on the Ministry of the Environment Red List II and near threatened species on the Nagano Red List

Hemerocallis citrine var. vespertine: Near threatened species on the Nagano Red List

Leonurus japonicus: Near threatened species on the Nagano Red List

Vincetoxicum pycnostelma: Near threatened species on the Ministry of the Environment and Nagano Red List

Insects 168 species

Plants 288 species

Grassland area in Japan

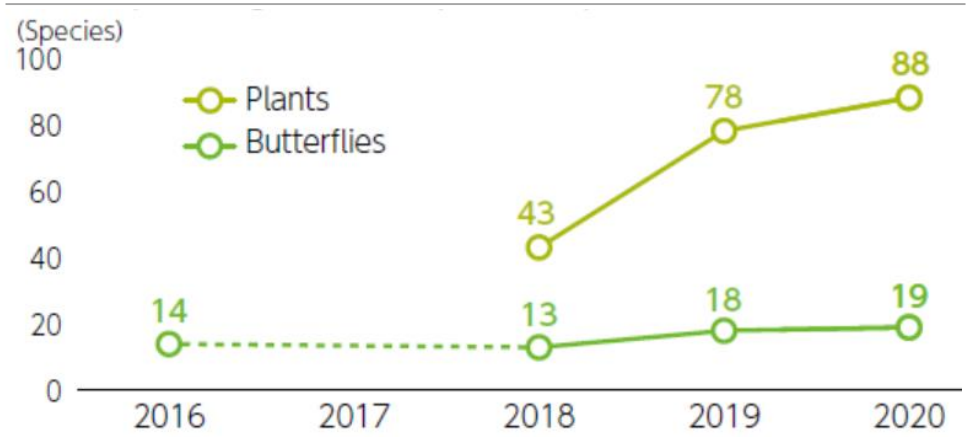
Aggregated from Successive-Year Forest Area Statistics and MAFF Statistical Tables

Ecosystem Restoration Survey at Tengusawa Vineyard

- In Tengusawa, the survey began while the land was still idle, making it a rare example among surveys conducted of the process when converting idle land into a vineyard.

Process of converting idle land into a vineyard at the Tengusawa, Yamanashi Prefecture

Recovery of Tengusawa Vineyard ecosystem



* There was no ecological survey in 2017, and we began plant surveys in 2018.

Argyronome laodice japonica
Listed as vulnerable (II) in the Ministry of the Environment Red Data Book

Employees Involvement in Restoring Rare Indigenous Species

- Under the direction of experts, employee involvement began with the aim of restoring rare and indigenous populations from 2016. Since then, the area has changed into high-quality grassland.

Sophora flavescens Restoration Project by an NGO and Elementary School

- Following the success of the project by an NGO and volunteers to increase the population of *Sophora flavescens*, the only edible feeding grass for the rare *Shijimiaeoides divinus*, the activity was expanded to a local elementary school from this year.

NGO + Volunteers

Sophora flavescens restoration project

In 2019, plant cuttings were obtained (picture in the upper left), and they were then grown into seedlings by NARO. These seedlings were raised by volunteers for about 2 years and planted in Mariko Vineyard in May 2021

Elementary school

Shijimiaeoides divinus: Critically endangered (IA) in the Ministry of the Environment Red List
(Photo: Taken by NARO in Aso)

‘Nature-Positive’ *Château Mercian* Vineyards

- Expanding vineyards for Japanese wine will lead to achieving ‘**nature-positive**’ required by 2030 Nature Compact and TNFD*.
- Mariko vineyard has a possibility to be recognized as a "conservation of the natural environment in cooperation with private companies(OECM**)”

From idle land to vineyard with grass undergrowth

Employee activities to restore rare and indigenous species populations

Volunteers and elementary school students to increase the population of *Sophora flavescens*

G7 2030 Nature Compact

Halt and reverse biodiversity loss of by 2030 and become ‘nature-positive’

TNFD（Goal）

Create a framework that enables companies to report and act on nature-related risks in order to change the flow of global capital from ‘nature-negative’ to ‘nature-positive’

The UN Biodiversity Conference (COP15)

To conserve more than 30% of terrestrial and marine areas by 2030 (30 by 30) and places where nature is effectively conserved by human activities (OECM) are being considered together.

*Taskforce on Nature-related Financial Disclosures
** OECM：Other Effective area based Conservation Measure

Water Resource Initiatives

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Recognizing the Differing Water Risks in Each Country and Region

- Kirin Group operates in regions with greatly different water stress, such as the difference between Japan and Australia and has long been aware of these kinds different water-related problems in each country and region.

	Water stress	Water risks
Japan (25 establishments)		

Water usage at Kirin Brewery

5.31 m^3/ k L

	Water stress	Water risks
Australia (7 establishments)		

Water usage at Lion

3.80 m^3/ k L

TCFD Scenario Analysis and Water Risk Assessment

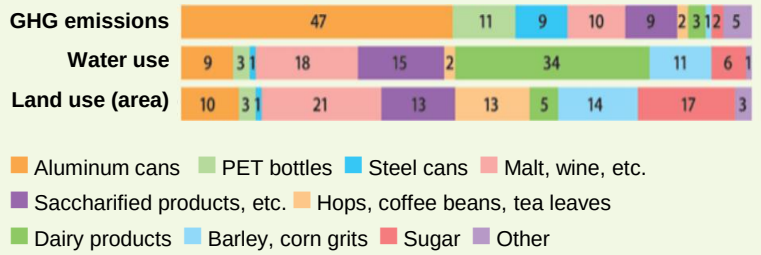
- Started early on working to quantitatively grasp water risk/stress and have continued these efforts from 2018 as part of the TCFD scenario analysis*.

2013 (disclosed in 2014): Calculated natural capital

Burden on natural capital in the supply chain (2013)

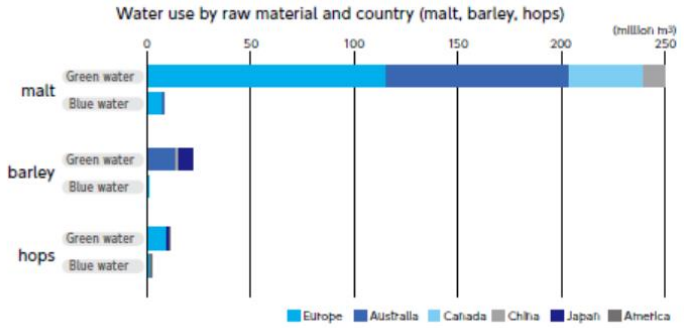
Environmental burden	Supply chain	Kirin	Ratio
GHG emissions (t-CO2)	1,129,655	295,903	4:1
Water use (㎥)	97,181,700	14,767,859	7:1
Land use (ha)	228,126	385	593:1

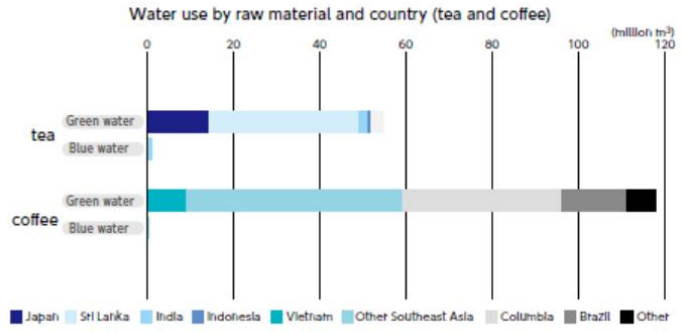
Comparison of the environmental burden



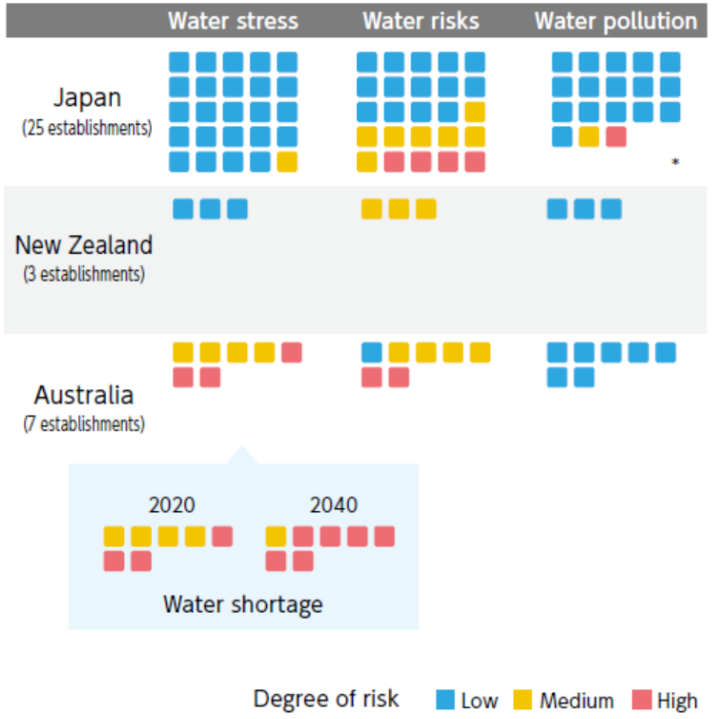
*TCFD Climate Scenario Analysis - Accounting for Sustainability

2017: Calculated water usage in the upstream parts of the value chain





2020: Assessed water risk at global locations



Response to Water Risk/Stress in the Value Chain and Operating Regions

- Need to address water use across the value chain, not just in the factory basin.
- Add climate change impact assessments and orient scientific management approaches.

Raw materials

Upstream

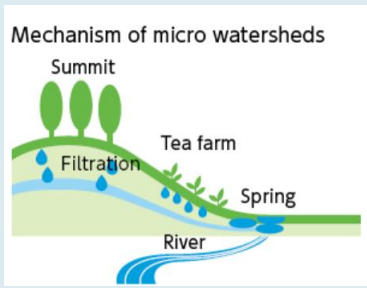
Plant

Downstream

Product

Watershed forestry activities

Watershed conservation activities in Sri Lanka



CDP DISCLOSURE INSIGHT ACTION A LIST 2021 CLIMATE WATER

Kirin Brewery

	Water usage	Water consumption rate
	-65%	-49%
1990	34,900 thousand m³	10.44m³/kL
2020	12,280 thousand m³	5.31m³/kL

Lion*

	Water usage	Water consumption rate
	-8%	5%
2015	2,936 thousand m³	3.61m³/kL
2020	2,689 thousand m³	3.80m³/kL

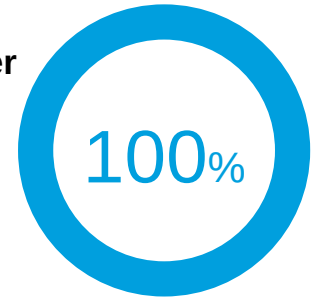
* Excluding dairy products and beverages

Reduce food waste

Watershed Conservation Activities at Tea Farms in Sri Lanka

- Watersheds inside farms located at high altitudes are the source of water for urban areas.
- From 2018, Kirin has provided support for watershed conservation activities, and currently conservation activities are being conducted at 12 farms, leading to increased environmental knowledge.

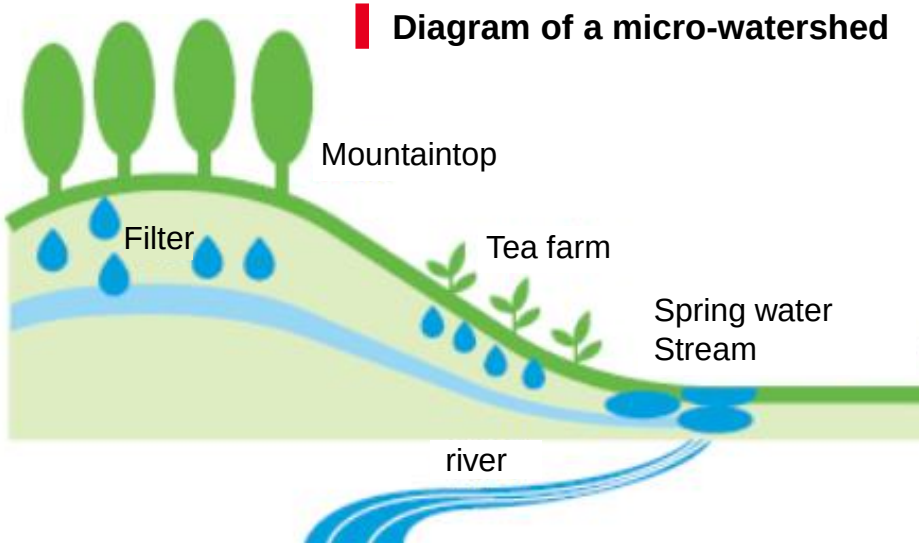
Learning about the importance of water
Number of people targeted:
15,000 (2020)



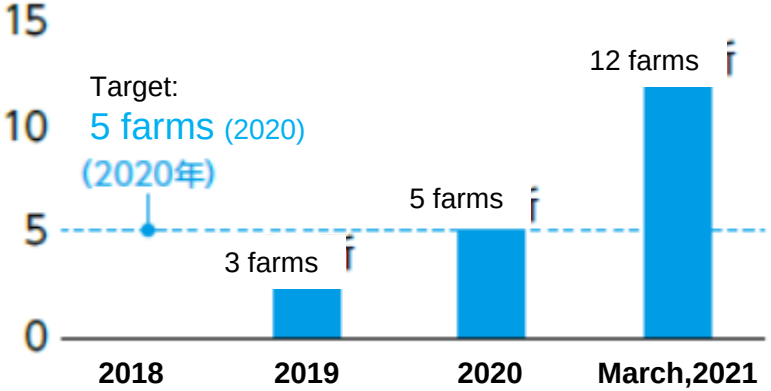
15,000 people

Leaflet for education about water

Diagram of a micro-watershed



Number of tea farms in Sri Lanka conducting watershed conservation activities



Summary

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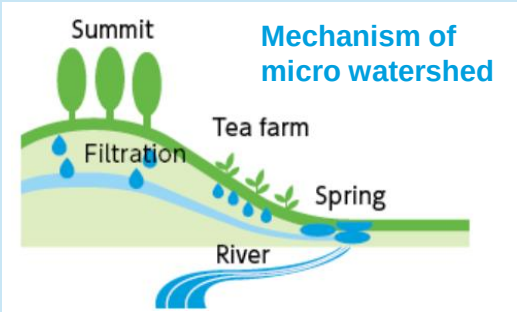
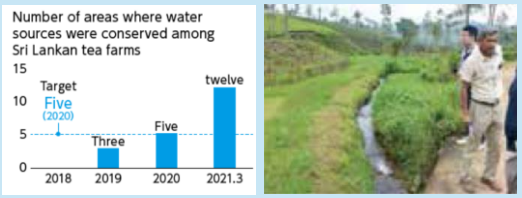
Kirin Group's Comprehensive Approach

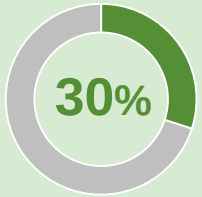
- Environmental problems are occurring in multiple, inter-related ways. Kirin's approach is to solve these problems by comprehensively addressing the issues of climate change, water, biological resources and containers packaging.

Watershed conservation



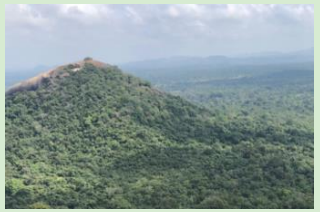


Support to Sri Lankan tea farms for obtaining certification



Number of certified farms: 93

Forest conservation/ absorb GHG

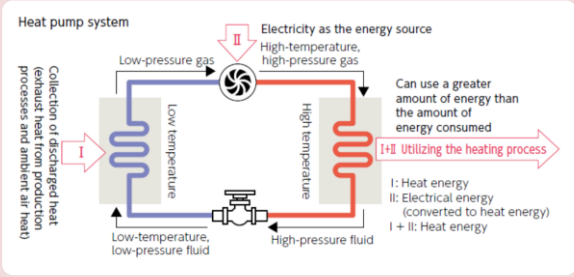


100% use of FSC certified paper for paper containers

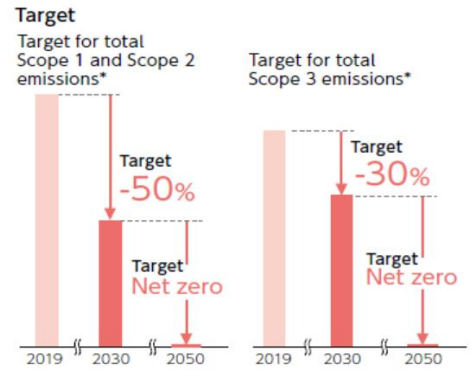
Raw materials / containers → Upstream Transportation → Manufacturing → Downstream Transportation → Use / disposal

Renewable energy

Energy conservation



Work to counteract climate change with products



*In December 2020, we moved from the old 2° C target to a 1.5° C target, which has been approved under the Science Based Target initiative (SBTi).

Future Initiatives

- Participate in SBTN and aim to create rules for ‘natural capital’ (biological and water resources).

Science Based Targets* Network

On February 27, 2021, Kirin became the first pharmaceutical and food & beverage company in Japan to participate in the Corporate Engagement Program sponsored by the Science Based Targets Network. By the end of 2022, Kirin plans to set targets for the use of natural capital.

*https://sciencebasedtargets.org

Kirin’s Response

Area	SBT certification conditions	Actions
Climate change	Already decided	Formulated 1.5℃ targets for Kirin Group and received approval
Water intake & consumption	End of 2022	Exchanging opinions towards rule making by participating in the pirot program
Ecological preservation (Land)	End of 2022	SBTN is developing guidance. Kirin Group participates in monthly meetings for rulemaking.
Forest loss/ conversion	End of 2022	

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